Flight Report – SEAC4RS ER-2, September 9, 2013

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Purpose of flight: The science goals for this flight were to: 1) underfly CALIPSO and collect coincident data, 2) perform aerosol radiation studies over two mobile AERONET sites, 3) evaluate AERONET aerosol inversion retrievals, and 4) acquire high altitude data and profile data on return to Houston.
Pilot: Stu Broce
Takeoff: 11:32 CDT
Duration: 8.1 hours
Notes:
ER-2 flew first toward southwestern Oklahoma and performed a dip down to about 45 kft to examine water vapor and ozone gradients. After this, the ER-2 climbed to nominal altitude of about 65 kft and proceeded toward the CALIPSO track. The ER-2 then descended to 63 kft and flew along the CALIPSO track from north to south, then reversed course and flew from south to north. Along the southern portion of the track cirrus clouds were observed but these dissipated before reaching the rendezvous point with the DC-8 and the mobile AERONET site set up along the CALIPSO track. The ER-2 then flew above the DC-8 radiation wall oriented along the principal plane above this AERONET site. There were scattered Cumulus clouds under this leg. The DC-8 then flew above the Leland AERONET site along the principal plane before flying over above the DC-8 above another mobile AERONET site located at Baskin, LA. This leg was also oriented along the principal plane. There were only a few small scattered Cumulus clouds located below the aircraft at this point. The ER-2 then flew back to Ellington and performed a spiral descent to 30 kft before landing. There were some small rain showers in the area near Ellington at the time of landing.
Aircraft and instruments: All instruments appear to have worked nominally as far as limited in-flight and quick-look analyses showed. All instruments are ready for the next flight.

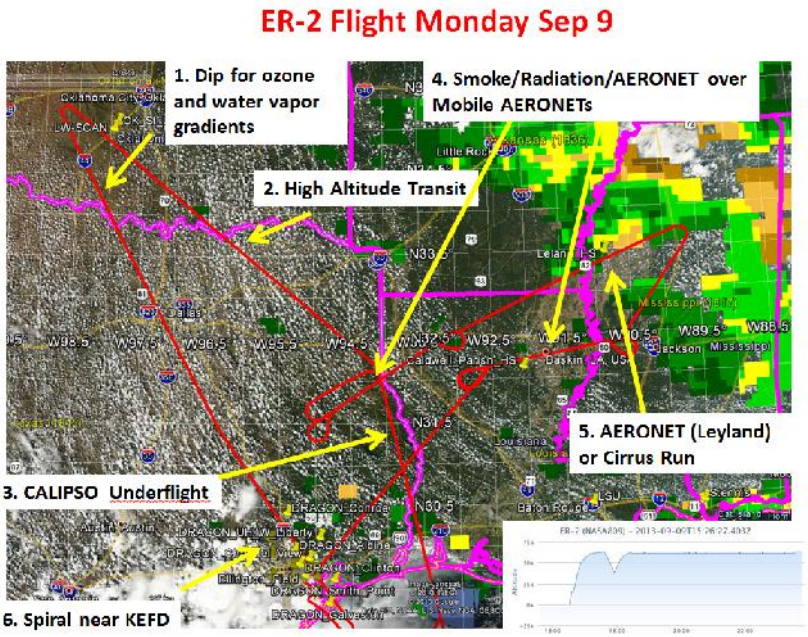

Figure 1. Flight track of ER-2 from September 9 overlaid on Aqua MODIS image showing clouds and color-coded AOT values. Inset shows the altitude profile of the ER-2.